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SEVERN
TRENT

STL

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Earth City, MO 63045

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ANALYTICAL REPORT

PROJECT NO. 200-MW-1 CHAR.

F04-015

Lot #: F4L150317
SDG #: W04468

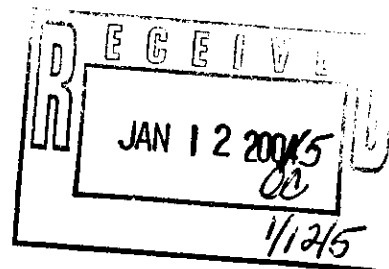
Steve Trent

Fluor Hanford Inc
825 Jadwin Ave
Richland, WA 99352

RECEIVED
AUG 22 2005
EDMC

SEVERN TRENT LABORATORIES, INC.

Marti Ward
MARTI WARD
Project Manager



January 6, 2005

Case Narrative
LOT NUMBER: F4L150317
SDG: W04468

This report contains the analytical results for the sample received under chain of custody by STL St. Louis on December 15, 2004. This sample is associated with your F04-015 SAF.

The analytical results included in this report meet all applicable quality control procedure requirements except as noted below.

The test results in this report meet all NELAP requirements for parameters in which accreditations are held by STL St. Louis. Any exceptions to NELAP requirements are noted in the case narrative. The case narrative is an integral part of this report.

All chemical analysis results are based upon sample as received, wet weight, unless noted otherwise.

Observations/Nonconformances

Reference the chain of custody and condition upon receipt report for any variations on receipt conditions and temperature of samples on receipt.

Oil & Grease

The LCS Duplicate failed low. The LCS and two Matrix Spikes were within the QC limits. Sample is out of hold and there will be no re-analysis.

SAMPLE SUMMARY**F4L150317**

<u>WO #</u>	<u>SAMPLE#</u>	<u>CLIENT SAMPLE ID</u>	<u>SAMPLED DATE</u>	<u>SAMP TIME</u>
G05L2	001	B19969	12/13/04	07:50

NOTE(S) :

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

METHODS SUMMARY

F4L150317

<u>PARAMETER</u>	<u>ANALYTICAL METHOD</u>	<u>PREPARATION METHOD</u>
Hexavalent Chromium	SW846 7196A	SW846 3060A
Nitrate-Nitrite	MCAWW 353.1	
Oil & Grease (Gravimetric)	SW846 9071A	
Percent Moisture	MCAWW 160.3 MOD	MCAWW 160.3 MOD

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes",
EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical
Methods", Third Edition, November 1986 and its updates.

LOT# F4L150317

M04468

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FLUOR Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				F04-015-073		PAGE 1 OF 1	
COLLECTOR Pope/Pfister/Tyra/Wiberg		COMPANY CONTACT CS Cearlock		TELEPHONE NO. 372-9638		PROJECT COORDINATOR TRENT, SJ		PRICE CODE 8N	
SAMPLING LOCATION 216-U-3; 22.5FT-25FT		PROJECT DESIGNATION 200-MW-1 Characterization Sampling and Analysis - Soil		SAF NO. F04-015		AIR QUALITY <input type="checkbox"/>		DATA TURNAROUND 45 Days / 45 Days	
ICE CHEST NO. AFS-04-059		FIELD LOGBOOK NO. HNF-N-386 1		COA 119144ES10		METHOD OF SHIPMENT Federal Express			
SHIPPED TO Severn Trent Incorporated, Richland		OFFSITE PROPERTY NO.				BILL OF LADING/AIR BILL NO.			
MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	POSSIBLE SAMPLE HAZARDS/ REMARKS N/A	PRESERVATION		Cool 4C	None				
		TYPE OF CONTAINER		6G	P				
		NO. OF CONTAINER(S)		1	1				
	VOLUME		120mL	500mL					
SPECIAL HANDLING AND/OR STORAGE Radioactive Tie To: B19952		SAMPLE ANALYSIS		SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Isotopes-129; Technetium-99; Titanium - H3;	<i>Only received for 500 P this 12-15-04</i>			
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME						
B19969	SOIL	12-13-04	0750	X	X				
CHAIN OF POSSESSION		SIGN/ PRINT NAMES				SPECIAL INSTRUCTIONS			
RELINQUISHED BY/REMOVED FROM <i>R. Pfister/R. Wiberg</i>		DATE/TIME 12-13-04 1415		RECEIVED BY/STORED IN <i>M0-026 FRIG 1</i>		DATE/TIME 12-13-04 1415		(1)NO2/NO3 - 353.1; Oil & Grease - 413.1; Chromium Hex - 7196; St. Louis	
RELINQUISHED BY/REMOVED FROM <i>M0026 Site Fridge #1</i>		DATE/TIME 12-14-04		RECEIVED BY/STORED IN <i>Kevin D. Hix</i>		DATE/TIME 12-14-04			
RELINQUISHED BY/REMOVED FROM <i>Kevin D. Hix</i>		DATE/TIME 12-14-04		RECEIVED BY/STORED IN <i>Petra Dawson</i>		DATE/TIME 12-14-04			
RELINQUISHED BY/REMOVED FROM <i>John L. Hix</i>		DATE/TIME 12-14-04 0900		RECEIVED BY/STORED IN		DATE/TIME			
RELINQUISHED BY/REMOVED FROM		DATE/TIME		RECEIVED BY/STORED IN		DATE/TIME			
RELINQUISHED BY/REMOVED FROM		DATE/TIME		RECEIVED BY/STORED IN		DATE/TIME			
RELINQUISHED BY/REMOVED FROM		DATE/TIME		RECEIVED BY/STORED IN		DATE/TIME			
LABORATORY SECTION	RECEIVED BY <i>Bill Clarke STL</i>				DATE/TIME 12-15-04 0900				
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD				DISPOSED BY				
				DATE/TIME					

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Lot No: F4L150317Condition Upon Receipt Form
St. Louis LaboratoryClient: RichlandDate: 12.15.04 Time: 0900Quote No: 56414Initiated by: AShipper/No: Fed Ex See belowCOC/RFA Numbers: See below

Condition/Variance (Circle "Y" for yes, "N" for no and "N/A" for not applicable):

1. <input checked="" type="radio"/> Y N	Sample received in undamaged condition?	7. <input checked="" type="radio"/> Y N	Sample received with Chain of Custody?
2. <input checked="" type="radio"/> Y N	Sample received within $4^{\circ}\text{C} \pm 2^{\circ}\text{C}$?	8. <input checked="" type="radio"/> Y N	Chain of Custody matches sample IDs on containers?
	Record <u>2, 2, 3</u>	9. <input checked="" type="radio"/> Y N N/A	Custody seal received intact on cooler?
3. <input checked="" type="radio"/> Y N N/A	Sample received with proper pH?	10. <input checked="" type="radio"/> Y N N/A	Custody seal tamper evident on cooler?
4. <input checked="" type="radio"/> Y N	If N/A - Was pH taken by original STL lab?	11. <input checked="" type="radio"/> Y N N/A	Custody seal on bottles received intact?
5. <input checked="" type="radio"/> Y N	Sample received in proper containers?	12. <input checked="" type="radio"/> Y N N/A	Custody seal tamper evident on bottles?
6. <input checked="" type="radio"/> Y N	Sample volume sufficient for analysis?	13. <input checked="" type="radio"/> Y N	Was CUR (equivalent) rec'd from original STL lab?

* Temperature Variance Does Not Affect the Following Analyses:

Metals-water

For DOE-AL (Pantex, LANL, Sandia) sites, verify pH all containers received, except for VOA, TOX, and soils.

Notes:

Fed Ex - 7908 5925 4761 - 2°

↓ 7908 5925 4750 - 2°
7908 5918 0799 - 3°

COC#S - I05-014-6 W05-010-113 S05-012-80 W05-012-221 F04-015
↓ -114 ↓ -68 ↓ -215

Corrective Action:

- ☐ Client's Name: _____ Informed by: _____ By: _____
- ☐ Sample(s) processed "as is". _____
- ☐ Sample(s) on hold until: _____ If released, notify: _____

Project Management Review:

Mulard

Date:

12.15.04

THIS FORM MUST BE COMPLETED AT THE TIME THE ITEMS ARE BEING CHECKED
 IF ANY ITEM IS COMPLETED BY SOMEONE OTHER THAN THE INITIATOR, THEN THAT PERSON IS REQUIRED TO APPLY THEIR
 INITIALS AND THE DATE NEXT TO THAT ITEM

4297

ADMIN-0004, Revised 2/17/04
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WET CHEMISTRY

FLOOR HANFORD IC

Client Sample ID: B19969

General Chemistry

Lot-Sample #...: F4L150317-001

Work Order #...: G05L2

Matrix.....: SOLID

Date Sampled...: 12/13/04

Date Received...: 12/15/04

% Moisture.....: 5.4

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Hexavalent Chromium	ND	0.40	mg/kg	SW846 7196A	12/29/04	4364339
		Dilution Factor: 1		MDL.....: 0.25		
Nitrate/Nitrite as N	0.85	0.50	mg/kg	MCAWW 353.1	12/17/04	4352330
		Dilution Factor: 1		MDL.....: 0.036		
Oil and Grease (Gravimetric)	ND	211	mg/kg	SW846 9071A	12/16-12/22/04	4352386
		Dilution Factor: 1		MDL.....: 87.3		
Percent Moisture	5.4	0.10	%	MCAWW 160.3 MOD	12/22-12/23/04	4356387
		Dilution Factor: 1		MDL.....:		

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #....: F4L150317 Work Order #....: G05L2-SMP Matrix.....: SOLID

G05L2-DUP

Date Sampled....: 12/13/04

Date Received...: 12/15/04

% Moisture.....: 5.4

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Oil and Grease (Gravimetric)						SD Lot-Sample #: F4L150317-001		
ND	ND		mg/kg	200	(0-35)	SW846 9071A	12/16-12/22/04	4352386
						Dilution Factor: 1		
Nitrate/Nitrite as N						SD Lot-Sample #: F4L150317-001		
0.85	0.84		mg/kg	1.2	(0-30)	MCAWW 353.1	12/17/04	4352330
						Dilution Factor: 1		
Hexavalent Chromium						SD Lot-Sample #: F4L150317-001		
ND	ND		mg/kg	0	(0-30)	SW846 7196A	12/29/04	4364339
						Dilution Factor: 1		

MATRIX SPIKE SAMPLE DATA REPORT

General Chemistry

Client Lot #....: F4L150317

Matrix.....: SOLID

Date Sampled....: 12/13/04

Date Received...: 12/15/04

Percent Moisture: 2.4

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Hexavalent Chromium	ND	40.0	37.2	mg/kg	93	SW846 7196A	12/29/04	4364339
			Work Order #....: G05L21AM MS Lot-Sample #: F4L150317-001					
			Dilution Factor: 1					
Nitrate/Nitrite as N	0.85	5.00	5.39	mg/kg	91	MCAWW 353.1	12/17/04	4352330
			Work Order #....: G05L21AH MS Lot-Sample #: F4L150317-001					
			Dilution Factor: 1					
Oil and Grease (Gravimetric)	ND	3330	2500	mg/kg	75	SW846 9071A	12/16-12/22/04	4352386
			Work Order #....: GX64X1AC MS Lot-Sample #: F4L020421-001					
			Dilution Factor: 1					
Oil and Grease (Gravimetric)	ND	3520	2750	mg/kg	76	SW846 9071A	12/16-12/22/04	4352386
			Work Order #....: G05L21AG MS Lot-Sample #: F4L150317-001					
			Dilution Factor: 1					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: F4L150317

Matrix.....: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Hexavalent Chromium	ND	0.40	mg/kg	SW846 7196A	12/29/04	4364339
		Dilution Factor: 1				
Nitrate/Nitrite as N	ND	0.50	mg/kg	MCAWW 353.1	12/17/04	4352330
		Dilution Factor: 1				
Oil and Grease (Gravimetric)	ND	200	mg/kg	SW846 9071A	12/16-12/22/04	4352386
		Dilution Factor: 1				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Lot-Sample #...: F4L150317

Matrix.....: SOLID

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECVRY	RPD	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Nitrate/Nitrite as N						WO#:G1CQ91AC-LCS/G1CQ91AD-LCSD LCS Lot-Sample#: F4L170000-330		
	4.00	3.77	mg/kg	94		MCAWW 353.1	12/17/04	4352330
	4.00	3.81	mg/kg	95	1.0	MCAWW 353.1	12/17/04	4352330
Dilution Factor: 1								

Oil and Grease (Gravimetric)						WO#:G1MK01AC-LCS/G1MK01AD-LCSD LCS Lot-Sample#: F4L170000-386		
	3330	2900	mg/kg	87		SW846 9071A	12/16-12/22/04	4352386
	3330	2600 N	mg/kg	78	11	SW846 9071A	12/16-12/22/04	4352386
Dilution Factor: 1								

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

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LABORATORY CONTROL SAMPLE DATA REPORT

General Chemistry

Client Lot #....: F4L150317

Matrix.....: SOLID

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Hexavalent Chromium	2.00	1.87	mg/kg	94	SWB46 7196A	12/29/04	4364339

Work Order #: G1X071AC LCS Lot-Sample#: F4L290000-339
Dilution Factor: 1

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.